



National Aeronautics and Space Administration
Goddard Space Flight Center

Wallops Flight Facility, Wallops Island, Virginia

Inside Wallops

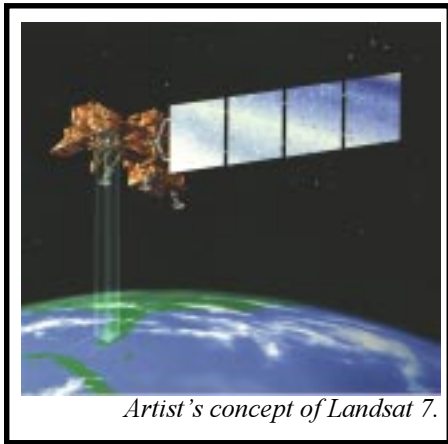
Volume XIX-99

Number 14

April 12, 1999

Landsat 7 Spacecraft To Join NASA's Earth Science Team

NASA will deploy the first major satellite in a program to check the health of Planet Earth and understand the complex interactions that drive global change. Landsat 7, scheduled for launch April 15 from Vandenberg Air Force Base, CA, is the latest mission in the Landsat series that has been documenting the Earth's surface for more than a quarter century.



Artist's concept of Landsat 7.

NASA plans to launch six spacecraft over the course of the year dedicated to advancing our understanding of global change. Landsat 7's role in this effort will be to make global, high-resolution measurements of land surface and surrounding coastal regions.

The diversity of applications makes the Landsat spacecraft unique among Earth observation satellites. Landsat images have been used in measuring the ebb and flow of glaciers, population changes in and around metropolitan areas, monitoring strip mining reclamation and assessing water quality in lakes. Landsat also has been used to monitor timber losses in the U.S. Pacific Northwest, map the extent of winter snow pack and measure forest cover at the state level.

"We feel that the Landsat 7 spacecraft will dramatically enhance the use of remotely sensed data in our daily lives," said Dr. Darrel Williams, Landsat 7 Project Scientist, at NASA's Goddard Space Flight Center (GSFC).

Every 16 days, Landsat 7 will fly over and document the condition of the entire globe. Landsat 7 is unique in that the images it collects are extremely detailed – Landsat can "see" features on the planet as small as 30 meters, compared to the geostationary GOES satellites which can only resolve objects of 4 kilometers or greater. The Landsat images so defined that scientists studying volcanoes can actually generate maps of lava flows with pinpoint accuracy.

Landsat 7 marks a new direction in the program to reduce the cost of data and increase global coverage for use in global change research. While previous Landsat data were often too expensive for widespread scientific use, all Landsat 7 data will be archived and available electronically within 24 hours and will be sold at cost.

Scientists use Landsat satellites for some very down-to-earth purposes. Observing urban areas over time with Landsat imagery can show where growth is taking place and help geographers evaluate how different urban planning programs effect population growth and land use. One of Landsat's 14 scientific teams will use Landsat observations to evaluate growth patterns of cities.

Another group of scientists led by the Department of Agriculture want to use Landsat 7 data to improve on a program to help farmers and land managers increase crop yields and cut costs while reducing environmental pollution. Scientists from NASA's partner agency in the Landsat 7 mission, the U.S. Geological Survey (USGS), want to use Landsat 7 to spot the amount and condition of dry biomass on the ground, which are potential sources for feeding wildfires.

The Enhanced Thematic Mapper Plus (ETM+) on board Landsat 7 is a passive sensor, a type of remote-sensing instrument that measures solar radiation reflected or emitted by the Earth. The instrument has eight bands sensitive to different wavelengths of visible and infrared radiation.

The USGS Earth Resources Observation Systems Data Center (EROS Data Center) in Sioux Falls, SD will process, archive, and distribute all U.S. Landsat data. The ground system at the data center will be capable of capturing and processing 250 scenes per day delivering at least 100 scenes to users each day.

The Landsat Project Office, located at GSFC, Greenbelt, is responsible for the development and launch of the satellite and the development of the ground operations system. GSFC will operate the spacecraft until Oct. 1, 2000, when this function is turned over to the USGS.

Lockheed Martin Missiles and Space, Valley Forge, PA built the spacecraft. The instrument was built by Raytheon (formerly Hughes) Santa Barbara Remote Sensing in Santa Barbara, CA.

April 14 is Earth Day



The Earth is the only home we have. Let's do our best to preserve it for future generations.

*Teach your children to recognize and respect the beauty in nature.

*Nurture the plants and trees around you. Big or little, they clean the air, enrich the soil and provide food and shelter for wildlife.

*Purchase products that are made from recycled materials or that can be recycled.

*Use non-toxic household products whenever possible. The next best choice is the least toxic substance that will get the job done.

*Install water saving toilets, faucets and showerheads. Leaky plumbing can use hundreds of gallons a day. Have plumbing leaks repaired promptly.

*When enjoying the great outdoors, use trails designated for your activity (hiking, biking, horseback riding, off-roading).

*Adopt a highway. Help keep the byways of the Shore clear of trash. Get some exercise and enjoy nature while you're doing it.

Don't depend on your neighbor or co-worker, it's up to each of us to protect and care for our share of the Earth!

Come out and join the Public Affairs Office who will have a display at the Salisbury Zoo on Saturday, April 17, as a part of Earth Day activities.



Wallops Shorts..... Science Fair Judging

Keith Koehler, Public Affairs Office, served as a judge for the Wicomico County Science Fair at the Centre at Salisbury on April 7.

NASA 8 Schedule

NASA 8 has resumed its normal flight schedule. For information or to make a reservation call x1473.

Monthly Weather Summary

by Jim Buchanan, Meteorologist

March - Winter or Spring?

A battle of seasonal strength existed for most of March. Spring tried to make an entrance and winter chill kept warmer weather at bay for most of the month. Several frontal passages and a couple of "nor'easters" would push warm weather in from the south then pull cold air from the north giving us temperatures with a roller-coaster effect. The changing temperatures would, in turn, affect the type of precipitation that fell in the Wallops area.

Precipitation was the weather story for March. There were 13 days of measurable rainfall with measurable snow mixing in on two of those days and a trace of snowfall on two other days. Total rainfall including the water equivalent of the snow was 6.87 inches. This is 3.2 inches more than is normal. The greatest amount, 3.29 inches, during a 24-hour period fell on March 14 and 15. Two inches of snowfall was recorded on March 9 and one more inch was recorded on March 27. The normal snowfall for March, if any occurs at all, is only .8 inches.

With the deep swings in temperatures during March, daytime high temperatures ranged from 32° on March 9 to a record-setting 75° on March 18. The old record high for March 18 was 71°. The range for overnight temperatures was from 19 to 48°. Even with two days of above 70° readings, the monthly temperature averaged only 43°, which is almost 2° cooler than normal. The high average temperature for the month was 52°, with a low average temperature of 35°.



Daylight Saving Time began on April 5 giving us another hour of daylight after work. With the days getting longer and a bit warmer maybe we'll have a normal transition into springtime weather.

Temperatures in May are usually quite comfortable. The average high temperature for May is just above 71° and by the end of the month it can get HOT. The record high of 97° was set on May 31, 1991. On the average, nights are a fairly comfortable 53°. It can still get rather chilly. A record low of 34° was set on May 8, 1974. Following a normally dry period in April, precipitation during May usually averages a little over three inches, with measurable rain on 10 different days.

We normally associate tornadoes and large hail with severe weather, but winds also can be a concern. As we move from spring into summer, fronts and thunderstorms will be on the increase. Everyone is urged to stay aware of fast changing weather that could result in damage from strong, gusty winds.

Hunting Easter Eggs



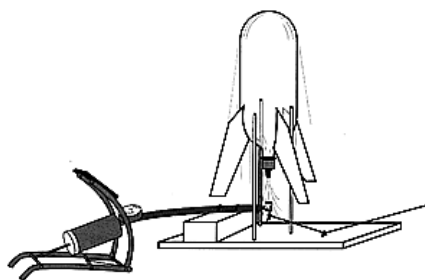
The annual WEMA/MAC Easter Egg Hunt was attended by more than 100 children and adults. After being rained out the previous week, the weather cooperated on April 3.

This year's winners were:
Age 4 and under
(Girls). There was a three-way tie.
Katherine Ross, Hayley Adkins and Rachel Orlando
(Boys) — Robbie Stancil

Ages 5,6 & 7
(Girls) — Sierra Orlando
(Boys) — Micah Bunting

Ages 8,9 & 10
(Girls) — Jamie Quick
(Boys) — Tyler Greenley

Co-chairs, Beverly Hall and Gerry McIntire, would like to thank all those volunteers who stepped forward and helped make this year's event a great success.



Mark your calendars for:

WEMA/MAC Tailgate Sale - April 14

Take Our Children To Work Day - April 22

Goddard 40th Anniversary Week - April 30 through May 7

Space Week - May 3 through May 7

WFF First Water Rocket Contest - May 4

Federal Employees Group Life Insurance (FEGLI) Open Season - April 24 through June 30

Upcoming Courses

The following Directorate Funded science and technical courses will be offered at Greenbelt during May and June:

Aerospace Power Systems Engineering

Dates: May 4-7, 1999
Submission Deadline: April 23, 1999
Cost Per Student: \$775.00

For additional information visit the web site: <http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/science.htm#sci1>

Risk Assessment for Space Flight

Dates: May 12-13, 1999
Submission Deadline: April 30, 1999
Cost Per Student: \$500.00

For additional information visit the web site: <http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/science.htm#sci9>

Space Based Laser Radar Systems: General Principles of Laser Altimetry and Radars

Dates: May 20, 1999
Submission Deadline: May 7, 1999
Cost Per Student: \$275.00

For additional information visit the web site: <http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/science.htm#sci11>

Fundamentals of Synthetic Aperture Radar : Principles and Applications

Dates: May 26-27, 1999
Submission Deadline: May 14, 1999
Cost Per Student: \$500.00

For additional information visit the web site: <http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/science.htm#sci3>

The Space Environment - Implications for Spacecraft Design

Dates: June 7-8, 1999
Submission Deadline: May 21, 1999
Cost Per Student: \$275.00

For additional information visit the web site at: <http://ohr.gsfc.nasa.gov/gsfc/training/Annualcal/science.htm#sci17>

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees.

Editor
Photography
Printing

Betty Flowers
Optical Section
Printing Management Office